

ABSTRACT

A process for producing microstructured tool insert for injection molding a part, the part being fabricated of a synthetic material, a metal or a ceramic material and including an arrangement of microstructures which are formed on an outer surface of the part and have two different predetermined depths. The process comprises the following steps:

- (1) microstructuring the front side of the first wafer by means of plasma etching to form an arrangement of first microstructures, which are formed on the front side of the wafer and which have a first predetermined depth,
- (2) microstructuring the rear side of the first wafer by means of plasma etching to form an arrangement of the second microstructures which form cavities which have a first orifice on the rear side of the first wafer and issue into the first microstructures on the front side of the first wafer or have a second orifice on the front side of the first wafer,
- (3) bonding the rear side of the first wafer to a carrier substrate to form a master,
- (4) electrochemically depositing a metal layer on the front side of the first wafer and in the cavities which are present therein and are formed by the second microstructures, and
- (5) separating the metal layer from the master, wherein the separated metal layer can be used as a tool insert for injection molding a part.